

REMARKS

Claims 1 through 21 are currently pending in the application.

Claims 1 through 15 have been withdrawn from consideration as being directed to a non-elected invention.

This amendment is in response to the final Office Action of March 24, 2003.

Claims 16 through 19 and 21 are rejected under 35 U.S.C. § 102(e) as being anticipated by Ackmann (U.S. Patent 6,271,602).

Claims 16, 19, and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kinoshita (Japanese Patent 58-90728) in view of Ackmann (U.S. Patent 6,271,602).

Applicants submit that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Although the claims have been amended for clarification purposes, as indicated below, with regard to claims 16 through 19 and 21, rejected under 35 U.S.C. 102(e) as being anticipated by Ackmann, Applicants respectfully submit that Ackmann does not describe, either expressly or inherently, each and every element of Applicants' claimed inventions as presently amended. In particular, Ackmann fails to describe, either expressly or inherently, the element of Applicants' presently claimed invention calling for "a second layer of material having an upper surface thereof substantially free of depressions in the portion thereof covering said overlay target in said substrate."

Applicants' claims are generally directed toward a method of preventing the formation of surface irregularities in the upper layers of semiconductor devices due to underlying depressions or trench features in the surface contours of lower layers. Specification, page 6, lines 12-21. Specifically, Applicants' process involves the etching, through a patterned resist, of closely

deposited upper layer.

In contrast, the portions of Ackmann which are cited as anticipatory disclose the formation and subsequent removal of irregularities of the type which are avoided altogether by Applicants' process. Specifically, the Examiner cites Figures 19-23 of Ackmann as disclosing the final element of claim 16, which calls for the deposition of a depression-free surface over the etched region. However, figure 22 clearly shows the formation of a layer 322 which is deposited over a layer 300 having a surface which bears a depression feature. Layer 322 is clearly affected by the underlying feature, as can be seen by the echo of the underlying feature in the surface of layer 322. Figure 23 shows layer 322 after it has been polished by methods such as chemical mechanical planarization, such that it is "substantially coplanar with the upper surface of semiconductor substrate 300 outside of [the] window area 312." Col 13, lines 29 and 30. Thus, Ackmann does not describe, either expressly or inherently, the formation of a surface free of irregularities caused by underlying features as required by Applicants' presently claimed invention.

The final step of Applicants' process is intended by Applicants to be interpreted to mean that the "second layer of material" is "substantially free of depressions," *as deposited*, "in the portion thereof covering said overlay target in said substrate," without additional processing steps such as, for example, planarization or polishing. Claim 16 has thus been amended to more clearly reflect Applicants' claimed invention. The words "as deposited" have been added to the final element of the presently claimed invention, along with other language directed to such claimed element of the invention. Ample support for the amendment is found in the specification at page 6, lines 12-21.

Claims 17 through 21 are respectfully deemed allowable as depending, directly or indirectly, from claim 16.

Claims 16, 19, and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kinoshita in view of Ackmann.

Applicants submit that to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a), the prior art must disclose the claimed invention or its obvious equivalents.

First, there must be a showing of a prima facie case of obviousness. Second, there must be a

reasonable expectation of success. Third, the cited prior art reference must teach or suggest all of the claim limitations. Furthermore, the suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicants' disclosure.

Applicants respectfully submit that no *prima facie* case of obviousness under 35 U.S.C. § 103 has been established or can be established regarding per the claimed invention as presently amended. Neither reference nor any combination of the references teaches or suggests that the process of Kinoshita be combined with the process of Ackmann. However, most importantly, the combination of Kinoshita and Ackmann does not teach or suggest every limitation of the invention as claimed as written to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention. Specifically, as set forth above, Ackmann does not teach or suggest the claim limitations calling for the deposition of "a second layer of material having an upper surface thereof substantially free of depressions in the portion thereof covering said overlay target in said substrate." The portions of Ackmann which are cited as establishing the above element (Col. 3, lines 1-12) actually call for a polishing step (Col. 3, lines 2-6) which results in a surface which is "coplanar with the upper surface of the wafer [sic]." All of the arguments given above are applicable. In short, while Ackmann does disclose the application of a layer which is ultimately polished or planarized to remove irregularities caused by dips and trenches in underlying layers, the reference does not disclose the deposition of a layer which is free of such irregularities. The amendment described above is intended to underscore this difference between Applicants' claims and Ackmann's disclosure. Applicants respectfully submit that claim 16 is thus allowable. Claims 19 and 20 are also allowable as they depend from an allowable claim.

Applicants request entry of this amendment for the following reasons:

The amendment is timely filed.

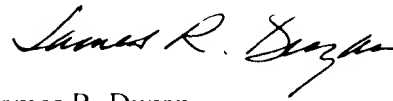
The amendment clearly places the application in condition for allowance.

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In summary, Applicants submit that claims 16 through 21 are clearly allowable over the cited prior art for the reasons set forth herein.

Applicants request the allowance of claims 16 through 21 and the case passed for issue.

Respectfully submitted,



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